



Databases and SQL
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Programming Challenge

- Install and configure a MySQL Database server.
 - There should be a database with *your name* and a user with *your name_db*.
 - Only the user should have access to the database from localhost.
- Create a table in your database and fill it with some data.
 - For example use PHP or Perl.
- Create a backup from your database.
- Install phpMyAdmin to provide a nice web-based interface for users.

Installing MySQL

```
apt-get install mysql-server
```

- **Several other packages installed:**

```
libdbd-mysql-perl libdbi-perl libhtml-  
template-perl libnet-daemon-perl  
libplrpc-perl mysql-client-5.1 mysql-  
server mysql-server-5.1 mysql-server-  
core-5.1
```

- **Set root password during installation**

Default configuration

- Located in `/etc/mysql/my.cnf`
 - TCP/IP Port: `port = 3306`
 - Number of allowed sessions: `max_connections = 151`
 - Size of query cache: `query_cache_limit = 1MB`
- **Replace** `my.cnf` **by** `/usr/share/doc/mysql-server-5.1/examples/my-small.cnf`

User administration

- `mysql -u root -p`
- **Change database:** `use mysql;`
- `insert into user (host, user, password) values ('localhost', '<your name>', password('XXX'));`
- `insert into db (host, db, user, Select_priv, Insert_priv, Update_priv, Delete_priv, Create_priv, Drop_priv) values (NULL, '<your name_db>', '<your name>', 'Y', 'Y', 'Y', 'Y', 'Y', 'Y');`
- `insert into host (host, db, Select_priv, Insert_priv, Update_priv, Delete_priv, Create_priv, Drop_priv) values ('localhost', '%', 'Y', 'Y', 'Y', 'Y', 'Y', 'Y');`

Create the database

- **Create database:**

```
mysqladmin -u root -p create <your  
name_db>
```

- **Reload database:**

```
mysqladmin -u root -p reload
```

Create a table by a perl script

```
use DBI;
my @con = ('DBI:mysql:<your name_db>','<your name>','<password>');
my $dbh = DBI->connect(@con) || die "Database connection not made:
$dbh->errstr";
#create table
my $sql = "CREATE TABLE disorder (Id VARCHAR(12) NOT NULL, Residue
LONGTEXT NOT NULL, MD LONGTEXT NOT NULL, time DATETIME NOT
NULL, PRIMARY KEY id (Id))";
my $sth = $dbh->prepare($sql);
$sth->execute();
$sth->finish();
#close connection
$dbh->disconnect();
```

Backup

- **Creating backups:**
 - `mysqldump -u root -p -all-databases > dump.sql`
 - `SELECT * INTO OUTFILE 'filename' FROM tbl_name;`
 - Copying table files (e.g. for MyISAM tables)
- **Check tables for errors:** `CHECK table;`
- **Repair errors:** `REPAIR table;`

phpMyAdmin

- `apt-get install phpMyAdmin`
- **Add** `'Include /etc/phpmyadmin/apache.conf'` to `/etc/apache2/apache2.conf`
- Reload the apache
- Go to <http://localhost/phpmyadmin> to have a graphical user interface

Thank You for your attention!